

Document Description	Authorised Working Practice							
Author:	Task Description							
Julius Zenevicius	Wind Turbine Safety Purpose: The purpose of this Authorised Working Procedure (AWP) is to identify hazards associated with wind turbines to perform research or maintenance activities and to ensure that any person ascending wind turbines located on Ignitis Renewables property (whether owned by Ignitis Renewables) is trained in the proper procedures and safety processes associated with wind turbines.							
Document No								
AWP-01								
Risk Assessment Ref:	Responsible Person							
RA09	Operations and Maintenance Management Review: This Authorised Working Procedure will be reviewed in January of every year by the O&M Manager and HSSE Management.							
Date:								
January 2024								
Version No	Mandatory PPE							
02								
Next Review								
January 2025	Safety Footwear EN20345	Safety Coveralls EN14126	Hi VIS Vest EN20471	Safety Harness EN361	Chinstrap Helmet EN50365	Safety Glasses EN166	Ear Protection EN352	Safety Gloves EN388
Procedure								
Any person climbing a wind turbine must be trained through a GWO Onshore safety course. Contractors will be required to furnish documentation of the same training. The training is detailed below based on the purpose of the climb.								
1. Responsibilities There will be 3 categories of training for potential climbers: - Those responsible for day-to-day operations are required to take the Competent Wind Turbine Climber and Rescue Certification – GWO training and local country work at height training. Wind Turbine Safety Rules are also mandatory along with Hailo Training. The teams will practice emergency rescue situations (drills) at least twice a year. - Those who will occasionally climb for maintenance or research purposes will be required to take a Work at Height and basic GWO training course and local country work at height training. Wind Turbine Safety Rules are also mandatory along with Hailo Training. - Management and visitors who will visit the turbine for research or assessment purposes will be required to take a Work at Height and basic GWO training course.								
Ignitis Renewables will ensure that: - Before any Ignitis Renewables employee is allowed to climb a turbine, that individual must attend an orientation. The HSSE or O&M Manager will lead this orientation. The orientation must be attended only once. This does not apply to contractors. All provisions of the wind turbine safety program outlined in this AWP are followed. - Anyone required to work on a wind turbine is trained in the proper procedures of wind turbine climbing and emergency rescue situations.								

- Anyone ascending a wind turbine has training certification available for viewing and is up to date. A copy of the training certificate for Ignitis Renewables employees is retained in the employee's personnel file.
- No one other than trained individuals is allowed on or in wind turbines;
- At least two trained Ignitis Renewables employees with Competent Wind Turbine Climber and Rescue Certification (GWO) are on-site at the tower any time the wind turbine is climbed; however, company-trained employees will not be required to be on-site with certified contract personnel who have completed the Competent Wind Turbine Climber. Contractors must have two trained people on site when a wind turbine is ascended.
- Only safety equipment inspected and approved by the external contractor is to be used at the wind turbine site by Ignitis Renewables employees and visitors.
- Contractors are responsible for maintaining their own approved safety equipment. The contractor is responsible for inspecting all equipment used by themselves.
- Security measures are in place and workable at the wind turbine site (locked doors, locked gates, locked ladders, locked elevators, or any other means required to secure the wind turbine); and
- Only one climber is on the ladder during maintenance and research operations.

2. Pre-climb Safety for Certified Climbers

- Survey the job site to determine the personal protective equipment (PPE) required.
- Identify all fall protection elements.
- Identify anchorage points and use equipment designed for the type of anchorage present.
- Determine any special equipment needed.
- Ensure that all personnel are familiar with any special equipment or procedures that will be used.
- Ensure that emergency services know how to access wind turbine locations.
- Ensure that a first aid kit is available and stocked with the appropriate supplies for site-specific incidents.
- All climbers must be trained in first aid and cardiopulmonary resuscitation (CPR).
- All climbers must be aware of environmental conditions (weather, terrain, etc.).
- All climbers must wear hard hats with chin straps while climbing.
- All climbers must wear Class 0 (all cotton clothing) while in the turbine.
- Ensure that a site safety meeting has been performed with all personnel who will be working on or in the wind turbine.

3. Rescue Planning

In the event, that a climber becomes stuck or injured on or in a wind turbine, call the local emergency number that is displayed on the Turbine information board and control room to notify them about the incident.

Follow the safety instructions displayed on the turbine information board.

Use the equipment provided to attempt to rescue a colleague from emergencies without endangering yourself. You must follow the GWO rescue training procedure and the information provided.

4. Equipment

- Always use the proper and suitable equipment for the job. Never alter or use incorrect body harnesses. Safety belts are not acceptable fall protection equipment. Because of the possibility of items falling off personnel, only one person is allowed on the ladder at a time, and they are not allowed to have any tools that are not tethered to their harness.
- The drop zone is identified as a circle with its centre at the base of the tower and having a minimum radius of one metre for every metre of working height that may vary with wind direction and speed as determined by the persons working in the tower. The drop zone will vary with the height at which

personnel are working. (Example: If personnel are working at a height of 50 meters, the drop zone would be a circle around the tower with a 25-metre radius.) The drop zone will be marked with caution tape or any means to show exactly where the drop zone extends. When using tools, always have a safety line attached to the tool to prevent it from falling, as long as it does not create an unsafe condition for the worker/workers using the tool.

- Any lanyard or body harness that has been exposed to loading shall be taken out of service until the manufacturer can recertify it for use.

5. Inspection by a Certified Climber

- Check the general condition of the structure before climbing. (Review maintenance records for pertinent information if they are available.)
- Check all components of the wind turbine before climbing (e.g., ladders, elevators, safety cable tension on the ladder, etc.). Inspect all PPE and climbing equipment before each use. Inspect lanyards for wear, cuts, and burns. If communication equipment is used, inspect it before each climb.
- Inspect all body harnesses, slings, lines, and connectors before each climb. With no exception, all climbers will use approved equipment to maintain a 100% tie-off while on or in the wind turbine.

6. Certified Climber Working in the Nacelle

- Be aware of where the red **EMERGENCY STOPS** are in the nacelle.
- While working in the nacelle, you **MUST** secure yourself with at least one safety line. Always make sure that there is no one below the turbine while you are working in the nacelle (even a small wrench is dangerous when falling from a height of 10 metres).
- The security bolt (rotor lock) **MUST** be mounted and locked out in the disc brake before anyone climbs out in the nose cone or starts working on the rotating parts. The power to start the turbines should be locked out and tagged. Tagging the service switch cannot be used as part of the lockout.
- If you are to work in the blade hub or with the blades, the security bolt **MUST** be mounted in the disc brake and locked, the traverse **MUST** be locked with the lock bolts, or the turbine **MUST** be in **EMERGENCY STOP**. Only authorised individuals may move the covering plates that cover the rotating parts or the electrical parts. After inspection, greasing, etc., close the skylights. Ensure that you have all tools before you start the descent and **REMEMBER** that the red emergency stops must be off before you can start up the turbine. If the blades have been or are iced, there is **great danger** in walking below or close to the rotor. In weather conditions where icing of blades may occur, the operator should ensure the area surrounding the turbine is clear in case of falling ice.

7. Precautions in Case of Fire

Call the local emergency number and the control room. If it is safe to do so:

- If the fire occurs in connection with an uncontrolled turbine, under no circumstances should you go near the turbine. With any type of fire in or near a turbine, the turbine must always be disconnected at the main switches. If it is not possible to access the main switch of the turbine, you should contact the power station for disconnection of the supply.
- A radius of a minimum of 500 m from the turbine must be evacuated and roped off.

8. Lockout/Tagout

(Refer to AWP Lock Out / Tag out Procedure)

The Ignitis Renewables shall establish a program consisting of energy control procedures, employee training, and periodic inspections to ensure that before any employee performs any servicing or maintenance on a machine or equipment where the unexpected energizing, startup, or release of stored energy could occur and cause injury, the machine or equipment shall be isolated from the energy source and rendered inoperative. This program shall address all electrical, mechanical, pneumatic, hydraulic, and stored energy issues related to the work being performed on wind turbine apparatus.

9. Electrical Safety

Certified Climbers who are to work or perform maintenance on turbines must be competent people wot work on the electrical systems.

Limited Approach Boundary

The limited approach boundary is the closest approach distance for unqualified employees unless additional protective measures are used. It is an approach limit at a distance from an exposed live part within which a shock hazard exists.

Where there is a need for an unqualified person to cross the limited approach boundary, a qualified person shall advise the person of the possible hazards and continuously escort the unqualified person while inside the limited approach boundary. Under no circumstance shall the escorted unqualified person be permitted to cross the restricted approach boundary.

Restricted Approach Boundary

- A restricted approach boundary is an approach limit at a distance from an exposed live part within which there is an increased risk of shock because of an electrical arc combined with the inadvertent movement of personnel working near the live part.
- No qualified person shall approach or take any conductive objects closer to exposed live parts operating at 50 Volts or more than the restricted approach boundary unless the following apply:
 - The qualified person is insulated or guarded against the live parts operating at 50 Volts or more (insulating gloves and sleeves are considered insulation only regarding the energized parts upon which work is being performed), and no uninsulated part of the qualified person's body crosses the prohibited approach boundary.
 - The live part operating at 50 Volts, or more is insulated from the qualified person and any other conductive object at a different potential.
 - The qualified person is insulated from any other conductive object during live-line bare-hand work.

Prohibited Approach Boundary

A prohibited approach boundary is an approach limit at a distance from an exposed live part within which work is considered the same as contacting the live part.

Instructions Acceptance

Full Name

Date

Signature